AMENDMENTS TO THE SPECIFICATION:

Page 1, immediately preceding the sub-heading "Technical Field" at line 3, insert the following heading:

BACKGROUND

Page 1, change the sub-heading "Technical Field" at line 3 as follows:

1. Technical Field

Page 1, change the sub-heading "Background to the Invention and Prior Art" at line 8 to the following sub-heading:

2. Related Art

Page 3, change the sub-heading "Summary of the Invention" at line 7 to the following heading:

BRIEF SUMMARY

Page 6, paragraph [0029]:

Further features and advantages of the present invention will become apparent from the following description of an exemplary embodiment thereof, presented by way of example only, and by reference to the accompanying drawings, wherein:--

Page 6, change the heading "DESCRIPTION OF AN EMBODIMENT OF THE INVENTION" as follows:

DETAILED DESCRIPTION OF EXEMPLARY EMBODIMENTS

Page 6, paragraph [0040]:

An exemplary embodiment of the present invention will now be described with respect to the figures, and an example of the operation of the embodiment given.

Page 8, paragraph [0047]:

In view of the above, within the present embodiment at step 2.4 foreground pixels are segmented from the input image 28, using the Stauffer and Grimson technique, and at step 2.6 the adaptive background image 24 is updated to take into account the received input image, and the updated image stored in the data storage medium 22. Full details of the necessary procedures to undertake step 2.4 are described in Stauffer and Grimson, *ibid.* sections 3.1 and 3.2. Regarding step 2.6, the background pixels are obtained as follows: the pixel colours in the background image assume those of the incoming image if they are classified as background at step 2.4. In the case that the incoming pixels have been classified as foreground, then the mean of the Gaussian distribution with the largest weight at the lowest variance (the most probable

background colour in the pixel) is chosen as the background pixel colour. As a result an updated background image can be obtained for every incoming frame. Within the embodiment the segmentation step 2.4 is performed by the foreground segmentation program 36, and the background adaptation step 2.6 is performed by the background adaptation program 32, both under the control of the control program [[28]] 31. An example background image from the sequence of input images used to generate the example images shown herein is shown in FIG. 5. An example input image with the shadow cast by an object circled is shown in FIG. 6.

Page 10, paragraph [0052]:

Those segmented pixels which are identified as either shadow or highlight pixels by the above logical conditions are then marked for removal from the foreground segmentation map. Note that in the embodiment the above steps are performed by the shadow detection program 34, under the control of the control program [[28]] 31.

Page 12, paragraph [0059]:

More specifically, at step 2.18, a dilation operation using a 9×9 block structuring element (with each block of the element being set to "1") is performed on the foreground segmented pixels of the segmentation map corresponding to FIG. 9 by the blob reconstruction program 38 to segment surrounding pixels to the already segmented

pixels as foreground pixels. Then, at step 2.20$_1$ the area of segmented blobs in the segmentation map thus obtained is compared with the segmented blobs within the stored mask, being the segmentation map obtained from the segmentation step of step 2.4$_1$ i.e. the Stauffer and Grimson segmentation. At step 2.22$_1$ an evaluation is performed to determine whether any of the segmented blobs obtained as a result of the morphological dilation touch or overlap the segmented blobs of the mask segmentation map. If this evaluation determines that there is no touching or overlapping of the mask segmentation blobs, then processing returns in a loop to the morphological dilation step 2.18 which is performed again. The loop comprising the steps 2.18, 2.20, and 2.22 is repeatedly performed until the evaluation of step 2.22 returns positive, in which case the loop is then ended. Formally, therefore, segmented blobs within the segmentation map are reconstructed according to Equation 2:

$$R = M_1 \cap (\tilde{M} \oplus SE) \qquad \text{Equation 2}$$

where M_s is the mask image obtained from the segmentation of step [[2.3]] 2.10, $\tilde{M}$ the segmented pixels after the shadow/highlight removal steps of s.2.12 to 2.16, and *SE* the structuring element whose size usually depends on the size of the objects; as mentioned above a 9×9 square element proved to work well in all our tests, but other size structuring elements which result in a dilation may be used. The underlying idea of this morphological dilation step is that the shadow removed blobs keep at least a number of

points that have been robust to wrong shadow removal. These robust points are appropriate for leading the reconstruction of neighbouring points as long as they form part of the silhouette in the original blob obtained from the segmentation of step 2.4.

Page 14, line 1: delete "CLAIMS" and insert the following heading:

WHAT IS CLAIMED IS: